also be used to measure the size of the inferior vena cava, thus helping in the estimation of right heart filling pressure. It can provide an assessment of right ventricular size and function, which are independently related to prognosis. Other findings that may be important in heart failure that can be picked up by HHU and may not be evident on physical examination are LV and left atrial size, wall thickening abnormalities indicating presence of coronary artery disease, presence and severity of mitral and tricuspid regurgitation, presence of LV thrombus, and visual assessment of LV dyssynchrony. All of these findings can assist in making management decisions.

To our knowledge, there are no data in regard to the value of repeated examinations with HHU in terms of managing patients. It may be that clinical examination alone may be adequate in most patients once a comprehensive initial assessment has been made. HHU may be useful when the clinical situation changes. More studies are needed to address this issue.

Finally, the days of the giants of physical examination such as Aubrey Leatham (2) and Proctor Harvey (3) are, unfortunately, over. And there are only a few Kanu Chatterjees left. There is no shame in admitting that physical examination skills are poor to middling for most other modern-day physicians. For them and their patients, HHU may be the answer. It is time to move on!

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Handheld Ultrasound is a Valuble Bedside Tool Which Can Supplement the Bedside Cardiac Exam but not Replace It

I read the article "Handheld Ultrasound Versus Physical Examination in Patients Referred for Transthoracic Echocardiography for a Suspected Cardiac Condition" by Mehta et al. (1) and the accompanying editorial by Marwick et al. (2) with great interest. In our current practice of cardiovascular medicine, where we have restricted time at the bedside, electronic medical record (EMR) documentation requirements, concern about appropriate testing, and the cost of medical care, a re-evaluation of the value of bedside diagnostic techniques is proper and necessary. However, I have several concerns regarding their article. The question is not whether comparison of the stethoscope in isolation to handheld ultrasound (HHU) is a better diagnostic tool when compared with an ultrasound gold standard but whether, in the presence of a good history, the time and information gained from a HHU is equivalent or better than completing a cardiovascular examination to establish a diagnosis and whether those findings result in a different clinical outcome. It is unclear from the article what the factors were that influenced downstream testing. Was it determined by the cardiac examination and HHU, by individual physician preferences, or totally by the patient's clinical picture? The article states that experienced cardiologists completed the cardiac examination but does not describe how the examination was carried out. We recently reported that cardiologists often do an incomplete examination without completely undressing the patient, examining in multiple positions, or using maneuvers to evaluate murmurs (3). The authors list the most common reasons given for the infrequent use of the HHU. The cardiology trainees in our clinic currently have access to HHU but use it infrequently, commenting that it rarely adds to clinical assessment after the history and physical or that the complete echocardiogram would still be clinically necessary to appropriately manage the patient and document findings. I agree with the editorial's comments concerning the traditional cardiac examination but would note that currently, much of the same criticism is true of HHU. It is often carried out inexpertly, is very operator dependent, and currently cannot be hard copied into the EMR. It is our observation that most cardiologists can complete an excellent bedside examination; they just do not make the effort. I do not question that HHU is a superior technology to the stethoscope, especially in the assessment of left ventricular function, but we need to study in which patients the HHU replaces the stethoscope, when it augments the bedside examination, and with which symptoms and diseases it improves our diagnostic skills and influences disease management. With these data in hand, we can have guidelines for practice that will inform the cardiologist when she should carry out a thorough cardiac examination or he should reach for the HHU.

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REPLY: Handheld Ultrasound is a Valuble Bedside Tool Which Can Supplement the Bedside Cardiac Exam but not Replace It

We thank Dr. Silverman for his interest in our paper (1). He has raised some interesting points. We agree that at times, a good history allows one to make a diagnosis, and the physical examination is only confirmatory. More often, though, a history and physical examination allow one to create a differential diagnosis, and additional tests are needed to make the definitive diagnosis. One reason why additional tests are needed is because physical examination in itself is not very helpful. Our paper and those of others show that replacing the physical examination by handheld ultrasound (HHU) allows one to make a definitive diagnosis without additional testing in a fair number of patients.

In our study, the physicians performing either physical examination or HHU knew the indication for which the standard echocardiogram has been ordered. Additional testing was based on this knowledge coupled with their examination. Using HHU obviated the need for additional testing in many patients, whereas physical examination left the physicians unsure of their findings, thus requiring more testing.

We did not instruct the cardiologists how to perform physical examination; neither did we instruct them how to use HHU. These were all experienced, board-qualified cardiologists who see patients regularly. Dr. Silverman is correct that most physicians do not perform an optimal physical examination. Any attempt at rectifying it is going to fail, as every medical school faculty member in the past few decades can attest to. It is best to take this on the chin and move on!

Dr. Silverman states that the same people who do a sloppy physical examination will also do a sloppy HHU examination. In our study, HHU and physical examination were performed by cardiologists trained in both, and yet HHU was superior, which tells us that it is perhaps easier to teach HHU than physical examination. We know it is hard for most of us to take, but it is time for the physical examination to go. The sooner we accept it, the better it will be for us, our patients, and health care costs.

Dr. Silverman advises that we should identify conditions where HHU is truly better than physical examination and perform it only in those cases. It is unlikely that we will reserve physical examination for some conditions and HHU for others. Although reluctantly, we will ultimately favor HHU or a similar technology over physical examination, although the transition is likely to be painfully slow!

"I have no doubt whatever, from my own experience of its value, that it will be acknowledged to be one of the greatest discoveries in medicine by all those who are of a temper, and in circumstances, that will enable them to give it a fair trial. That it will ever come into general use, notwithstanding its value, I am extremely doubtful; because its beneficial application requires much time, and gives a good deal of trouble both to the patient and the practitioner; and because its whole hue and character is foreign, and opposed to all our habits and associations" (2). This was a quote in 1821 regarding the stethoscope! Some things never change!

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